**Recycling Wafer-Silicon Solar Modules for a Sustainable PV Industry**

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The production and deployment of wafer-silicon solar modules continue to expand rapidly. In 2015 they reached ~50 GWp annual deployment and accounted for over 90% of the PV market. As the deployment scales up, there will be mounting end-of-life modules and recycling them will become a necessity in 10–15 years. The current practice of silicon module recycling recovers only the aluminum frame and the front glass sheet, but aluminum and glass have little values as raw materials. As a result, recycling silicon modules in Europe survives on a mandatory fee imposed on module manufacturers. The valuable materials in silicon modules are the solar-grade silicon and silver. A financial analysis is presented on the revenues which can be generated by recovering the valuable materials in silicon modules. With a 90% material recovery rate, each 60-cell module can generate ~$11. The revenues will make silicon module recycling a profitable business, removing a major barrier to broader practice of recycling. In addition, the toxic material, lead which is a component in the solder, must be removed from the recycling sludge so the sludge can go to landfill with a minimum environmental impact. Finally the talk will provide an update on recent progress in Laboratory for Terawatt Photovoltaics at ASU on recovering valuable and toxic materials from silicon modules, including solar-grade silicon, silver, lead, tin, and copper.